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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/645,734 | 08/21/2003 | Ronald Buford Sheppard | 71179/US04 | 9154 |
| 7590 | 11/30/2004 | | | |
| Steven A. Owen Eastman Chemical Company P.O. Box 511 Kingsport, TN 37662-5075 | | | | |
| EXAMINER OH, TAYLOR V | | | | |
| ART UNIT | | PAPER NUMBER | | |
| 1625 | | | | |

DATE MAILED: 11/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/645,734

Applicant(s)

SHEPPARD ET AL.

Examiner

Taylor Victor Oh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-16 and 18-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-16 and 18-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

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Final Rejection

The Status of Claims

Claims 1, 3-16, 18-22, and 23-26 are pending.

Claims 1, 3-16, 18-22, and 23-26 have been rejected.

Double Patenting Rejection

The rejection of Claims 1-26 provisionally under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1,3-9, 11-14, 16-24, 26-27, 29-31 of copending Application No. 10/645,737 has been withdrawn due to the Terminal Disclaimer filed on 10/5/04 .

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The rejection of Claims 18, 23 and 25 under 35 U.S.C. 112, first paragraph has been withdrawn due to the modification made in the amendment.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

The rejection of Claims 1 , 9, 11, 13, 15, 16, 18, 20, and 23 under 35

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U.S.C. 112, second paragraph, has been withdrawn due to the modification made in the amendment.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The rejection of Claim 22 under 35 U.S.C. 102(b) as being anticipated clearly by Scott et al (U.S. 4,158,738) has been withdrawn due to the cancellation made in the amendment.

Claim Rejections - 35 USC 103

1. Applicants' argument filed 9/14/04 have been fully considered but are not persuasive.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The rejection of The rejection of Claims 1, 3-16, 18-22, and 23-26 under 35

U.S.C. 103(a) as being unpatentable over Scott et al (U.S. 4,158,738) in view of Zeitlin

et al (U.S. 5,095,146)

The rejection of Claims 1, 3-16, 18-22, and 23-26 under 35 U.S.C. 103(a) as being unpatentable over Scott et al (U.S. 4,158,738) in view of Zeitlin et al (U.S. 5,095,146) is maintained for the reasons of the record on 4/21/04.

Applicants' Argument

Applicants argue the following issues:

- a. There is no motivation to combine the Scott et al and Zeitlin et al due to the large differences;
- b. Both prior art are involved in the removal of different impurities ;
- c. In Scott, the solid-liquid separator is operated at a lower temperature unlike the claimed process takes place at a temperature of 110 to 200⁰ C;
- d. Zeitlin et al is directed to a process where water is added to crystallizers to remove p-toluic acid , which none of Scott and the current invention teach;
- e. Although Zeitlin et al uses high temperature centrifuges, there is no motivation to combine the Scott et al and Zeitlin et al ;
- f. Neither Scott nor Zeitlin teach a solvent exchange between the oxidation and post oxidation zone unlike the claimed process.

Applicants' arguments have been noted, but the arguments are not persuasive.

First, regarding the first, the second, the third, the fourth and fifth arguments, the Examiner has noted applicants' arguments. However, Scott et al does teach the purification step of terephthalic acid where the slurry of the terephthalic acid mixture is fed to two additional crystallizers, the temperature of the product goes down to 105 °C, whereas Zeitlin et al expressly teaches the purification process of terephthalic acid in which the centrifuging step is conducted at the temperature of 149 °C and pressure of 67 psig. (see col. 6, lines 51-59).

Both processes have commonly involved in the purification of terephthalic acid by crystallization, thereby removing the impurities. Scott et al expressly describes the use of the centrifuge in the process of isolating terephthalic acid by removing such impurities as 2,6-dicarboxyfluorenone (see col. 6, lines 21-25), whereas Zeitlin et al has focused the recovery operation of the pure terephthalic acid using the centrifuges, thereby removing any impurities, such as various organic impurities including p-toluic acid (see col. 3, lines 39-41), fluorenone (see col. 1, line 26) from the crude terephthalic acid mixture; therefore, on the contrary to applicants' argument, there is little difference as to the nature of the impurities between the prior art since they both share fluorenone impurities.

Furthermore, Zeitlin et al has indicated that there is a significant effect on the reduction of impurities in the crude terephthalic acid by adding water to the crystallizers (see col. 3, lines 36-38). Thus, there is a motivation to combine the prior art

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in order to enhance the removal process of those impurities in both processes by adding water regardless of the same motivation to arrive at the current invention.

Therefore, it would have been obvious to the skilled artisan in the art to have motivated to incorporate the teaching of Zeitlin's et al adding water to the crystallizer into the Scott et al process for the purpose of obtaining the purified terephthalic acid acceptable for the manufacture of fibers.

Second, regarding the sixth arguments, the Examiner has noted applicants' arguments. However, the solvent exchange between the oxidation and post oxidation zone is nothing more than the optimization process in order to save an operational cost for the process. Therefore, it would have been obvious to the skilled artisan in the art to be motivated to practice the solvent exchange between the oxidation and post oxidation zone so as to save the operation cost in the process.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Taylor Victor Oh whose telephone number is 571-272-0689. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cecilia Tsang can be reached on 571-272-0562. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

[Handwritten signature]
11/28/04

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